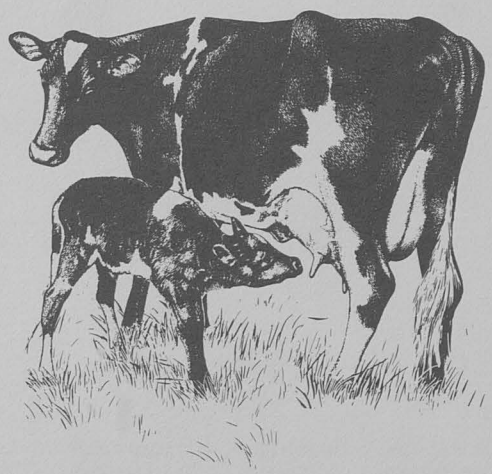
Extension Folder 575
DAIRY CALF AND HEIFER
CORRESPONDENCE COURSE

Unit 2—Management of the Newborn Calf (birth to three days)

Purposes

- Identify management practices that help to reduce calf mortality
- Understand the importance of colostrum feeding



Agricultural Extension Service University of Minnesota

CARE OF THE CALF FOLLOWING BIRTH

The average death rate for calves is 20 percent. Some of these animals are born dead or abnormal, but one out of every seven live-born calves will not reach two years of age. Approximately 25 percent of the live-born calf losses occur before the end of the first week. Many of these losses are preventable if simple precautions are taken. The following management practices can help ensure healthy, viable calves:

1. Immediately following birth, remove mucus and membranes from calf's nose and mouth.
2. Check to see if the calf is breathing. Artificial respiration can be applied by pushing in on chest wall for calf having difficulty.
3. Allow the cow to lick the calf and/or briskly rub the calf with a dry, clean, rough cloth or sack. This will help stimulate respiration and blood circulation.
4. Open navel cords are direct pipelines for bacteria and disease agents to enter the calf's body. Immerse and thoroughly saturate the navel cord in a tincture of iodine (1-2%) or other disinfecting solution. Clip or tie the navel cord shut and, if needed, cut it back to six inches. The navel cord should be disinfected again the next day.
5. Vaccines, antibiotics, and vitamin shots or boluses can be administered if necessary. Vitamin shots are good insurance; however, broad spectrum vaccines or antibiotics are probably of little benefit. Antibiotics should be used with the advice of your veterinarian after a specific disease organism has been identified.

FEEDING THE NEWBORN—DAY 1

Calves have no protection against diseases at birth. The transfer of immune globulins or antibodies for disease protection does not occur between the dam and fetus of ruminant animals. Colostrum, or first milk, is the only source of antibodies for the newborn calf. Antibodies can be absorbed through the intestinal wall only during the first 24 to 36 hours of life; the maximum amounts are absorbed within the first hour. After 24 to 36 hours, or after ingestion of other food or exposure to bacteria, the intestine loses its ability to absorb antibodies; therefore, it is vital that colostrum be fed within the first hour of life.

Research has shown that both the amount and time of colostrum feeding are important in helping prevent diseases. Calves should receive approximately five percent of their birth weight in colostrum during the first half hour of life. In large breeds this would be two quarts or four to five pounds, in small breeds one to one-and-one-half quarts or two to three pounds. Another feeding of equal size should be fed 12 hours later.

Colostrum is important not only for disease protection but also for nutrition. It contains more protein (primarily in the form of antibodies), more fat, and more of some minerals and vitamins than does whole milk (table 1). Colostrum's high vitamin A content is particularly important because liver stores of this vitamin are typically low in the newborn calf. Colostrum also contains lower amounts of milk sugar (lactose) than does whole milk. This is beneficial because excessive amounts of lactose can cause the young calf to scour.

Table 1. Composition of Colostrum and Whole Milk

Constituent	First-Milk Colostrum	Whole Milk
Total solids, %	23.9	12.9
Fat, %	6.7	3.5
Nonfat solids, %	16.7	8.8
Protein, %	14.0	3.1
Immune globulins, %	6.0	.09
Lactose, %	2.7	5.0
Calcium, %	.26	.13
Phosphorus, %	.24	.09
Vitamin A, IU/quart	9000	850

Either hand feeding by nipple bottle or force feeding with a stomach tube or esophageal feed bag is the only way to know exactly when and how much colostrum a calf receives. Milking the cow and then measuring out the colostrum is strongly recommended. Nursing raises too many questions as to the amount of colostrum a calf receives. If nursing is the method of choice, the udder should be washed and disinfected before the calf is allowed to nurse. Maintaining a rather sterile digestive tract in the calf before either nursing or being nipple fed is important in maximizing antibody absorption. Most calves should be helped to nurse since research indicates more than 30 percent of them will not nurse on their own.

Occasionally cows are milked before freshening. In these cases, the first milk should be saved because the milk produced at freshening is no better than ordinary milk for disease protection. The first-milk colostrum can either be refrigerated, if it is going to be used within a day or two, or frozen. Freezing in two quart containers is easiest and handiest for thawing at feeding time. Every dairy person should have four or more quarts of first-milk colostrum in the freezer.

First-milk colostrum of older, home-raised cows will contain higher levels of antibodies against on farm diseases than that of young or purchased animals. This colostrum can be used for calves whose dams didn't go through a dry period or produced abnormal colostrum, such as with acute mastitis. Slightly bloody colostrum can be fed safely to calves if it is otherwise normal.

MANAGEMENT—DAY 2 AND 3

Colostrum should be fed for the first three or four days after birth. Second, third or later milkings can be fed after the first day. A good rule of thumb is to feed approximately eight percent of body weight (90 lb calf = 7.2 lb of liquid).

On the second day, the calf should be removed from the dam and put into an individual unit. The housing system chosen should meet the specifications outlined in Unit 4. Before separating dam and calf, permanently identify the calf. This can be done with eartags, ear tattoos, or neck chains and/or photographs or sketches. Identification of sire and dam along with date of birth should be entered into a permanent record book.

OBSERVE CALVES TWICE DAILY

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Management of the Newborn Calf

Please Fill Out and Return

Name_____

Address_____

1. What was your calf mortality rate last year?

	Number	% of cows calving
Born dead	_____	_____
Died first week	_____	_____
Died first month	_____	_____
Died first year	_____	_____

2. List your management practices following calving and compare them with the ones listed on page 1.

3. How soon after birth do your calves receive colostrum?

How much?

Over

4. Situation: You just bought a springing heifer that isn't supposed to calve for six weeks. Two weeks after the sale on your morning visit to the barn, you found she has had a heifer calf. Which colostrum should be fed to that heifer calf and why?

   (a) Springing heifer's (DAM'S) colostrum.

   (b) First milk colostrum from an older cow that was stored in the freezer.

   (c) Fermented colostrum.

   (d) It's too late to worry about it so just forget it.

The following publication is also available on request. Please check the box if you would like to receive it.

☐ *Using Colostrum to Raise Dairy Calves,* Dairy Husbandry Fact Sheet 9